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ABSTRACT

This study compared the effects of professional and subprofessional counselors using group insight and group desensitization techniques with high and low imagery arousal test anxious college students. Two professional and two subprofessional counselors met with groups of three students for five interviews to administer insight and desensitization treatments. Dependent variables included the S-R Inventory of Anxiousness, Test Anxiety Inventory, Observers' Checklist, Test Anxiety Rating Scale, Pulse Rate, Thayer-Deactivation Checklist, Therapists' Ratings, and Client Ratings. High and low imagery arousal subjects were categorized by degree of reported physiological anxiety when certain situations were imagined when administered the Imagery Arousal Inventory. The major conclusions of the study were: (1) Group desensitization methods caused a significantly greater decrease in mean change scores than group insight procedures. (2) Groups led by subprofessional counselors were in general as effective as groups led by professional counselors. (3) High imagery arousal subjects did not show a significantly greater decrease in change scores when compared with low imagery arousal subjects. (4) Experimental groups showed a significant decrease in mean change scores on all of the criterion measures when compared to control groups (Author)

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PROFESSIONAL AND SUBPROFESSIONAL COUNSELORS USING GROUP DESENSITIZATION AND INSIGHT PROCEDURES

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PROFESSIONAL AND SUBPROFESSIONAL COUNSELORS USING GROUP DESENSITIZATION AND INSIGHT PROCEDURES

SUMMARY

This study was designed to compare the effects of professional and subprofessional counselors using group insight and group desensitization techniques with high and low imagery arousal test anxious college students.

Two professional and two subprofessional counselors met with groups of three students for five interviews to administer insight and desensitization treatments. Wait control and no contact control groups were included to control for external interview influences and attention effects. Dependent variables included the S-R Inventory of Anxiousness, Test Anxiety Inventory, Observers' Checklist, Test Anxiety Rating Scale, Pulse Rate, Thayer Activation-Deactivation Checklist, Therapists' Ratings, and Client Ratings. High and low imagery arousal subjects were categorized by degree of reported physiological anxiety when certain situations were imagined when administered the Imagery Arousal Inventory.

The major conclusions of the study were:

(1) Group desensitization methods caused a significantly greater decrease in mean change scores than group insight procedures. Several criterion measures, the S-R Inventory of Anxiousness, Test Anxiety Inventory and Client Ratings clearly differentiated the two treatments. The differences on the remaining measures were not as pronounced.

(2) Groups led by subprofessional counselors were in general as effective as groups led by professional counselors. There was some variability in the data however. The S-R Inventory of Anxiousness favored the subprofessional counselors while the Test Anxiety Rating Scale indicated that the professional counselors did significantly better. The remaining dependent variables, the Test Anxiety Inventory, Thayer Activation-Deactivation Checklist, Pulse Rate, and Observers' Checklist failed to suggest an advantage for either group.

(3) High imagery arousal subjects did not show a significantly greater decrease in change scores when compared with low imagery arousal subjects. Low imagery arousal subjects did significantly better than high imagery arousal students when the Observers' Checklist was the dependent variable. It appears that the degree to which clients physiologically re-experience images does not determine success or failure in counseling. More sensitive techniques for assessing level of arousal need development.

(4) Both experimental groups showed a significant decrease in mean change scores on all of the criterion measures when compared to control groups.

INTRODUCTION

Systematic desensitization and insight counseling are two widely accepted contemporary approaches geared toward relieving anxiety but yet hold divergent theoretical positions. Recent research efforts to contrast these methods have shown that desensitization procedures have generally been more successful than insight methods in reducing speech anxiety (Paul, 1966), and anxiety related to heights and enclosures (Lazarus, 1961). Katahn, Strenger, and Cherry, (1966) reduced test anxiety by combining group counseling with desensitization methods. A number of investigators have shown that desensitization procedures have been effective with test anxious students (Cohn, 1969, Donner and Guerney, 1969, and Emery and Krumboltz, 1967) and many other maladaptive behaviors (Lang, Lazovik and Reynolds, 1965, Wolpe, Salter, and Reyna, 1964, Grossberg, 1964, Ford and Urban, 1967 and Davison, 1965). This study will compare the efficacy of group desensitization and group insight methods in treating test anxiety.

One of the difficulties today in psychotherapeutic research is the outcome criterion problem. Paul (1967) suggests that a factorial group design approach with no-contact and wait control groups would help restrain confounding variables. His main criticism of outcome research is that we should investigate "what treatment, by whom is most effective for this individual with that specific problem and under which set of circumstances?" (p. 111). The primary objective of the present study is to investigate which treatment (insight or desensitization) administered by whom (professional or subprofessional counselors) is most effective with what type of client, (high or low imagery arousal subjects).

The necessity for elaborate long-term professional training is currently being questioned. Many researchers are using auxiliary, or subprofessional personnel, to achieve certain types of behavior changes with certain types of clients. Poser (1966), Wetzel (1966), Carkhuff and

Truax (1965), and Magoon and Golann (1966) have reported that counselor support personnel can effectively treat certain types of problems. Kanfer (1966) and Schlossberg (1967) both call for the increased use of subprofessionals to relieve the manpower shortage in the applied behavioral sciences area and maximize the professionally trained person's talents by expanding their role to include arranging optimal environmental treatment conditions. The present study intends to evaluate what differences, if any, exist between groups led by professional and subprofessional counselors.

Individual differences in clients often seem to limit the effectiveness of desensitization and insight treatment. Wolpe and Lazarus (1966) point out that some clients have a difficult time forming visual imagery. Desensitization cannot be effective without physiologically experiencing, to some degree, the original emotional reaction. For example, while imagining the original aversive situation, "panic on a final examination", the subject must be able to "feel" some of the original fear initially elicited in the classroom. This aversive stimulus is then paired with relaxation responses so that it can be "desensitized".

Accurate and reliable recording of the arousal quality of a subject seeking psychotherapy for specific disorders would aid in prognosis and assignment to a particular treatment. The counselor however, must rely almost exclusively on the subject's self-report which hopefully, closely approximates his real-life experince. Rimm and Bottrell (1969) have found that self-rating had a low correlation with an individual's emotional response to imagined fearful scenes, supporting the notion that even though a person might be able to imagine scenes with a good deal of clarity, the affective, or physiological response need not be a necessary correlate of the experience. Grossberg and Wilson, (1967) however, found that subject's self-ratings of imagined fearful scenes were significantly correlated with changes in heart rate, suggesting that a person can accurately determine that physiological reactions are occurring while imagining scenes. The main intent of investigating imagery arousal is to see if high imagery arousal Ss do better in desensitization, and/or insight therapy, than low arousal Ss.

No one type of criterion measure is appropriate for all clients due to their differential characteristics and problems (Krumboltz, 1966, and Thoresen, 1966a). They suggest that observable and individualized goals may take the form of changing maladaptive behavior, or improving decision-making behavior, thereby making the evaluation of the "successes" of therapy dependent upon the idiosyncratic client objectives. Paul (1966) used pulse rate, observational samples of specific predetermined anxious behaviors, self-ratings and therapist ratings. Multi-dimensional assessment instruments - observational, physiological and self-rating - will be

examined to help evaluate what treatment, given by which counselor results in what changes in criterion measures of client behavior.

The general hypotheses of this study are as follows:

(1) Groups receiving systematic desensitization procedures will show a significantly greater decrease in criterion scores than groups receiving insight counseling (Treatment Factor).

(2) There will be no significant differences on mean change scores of groups led by professional counselors when compared with groups led by subprofessional counselors (Counselor Level Factor).

(3) High imagery arousal subjects will show a significantly greater decrease in criterion scores when compared with low imagery arousal subjects (Arousal Level Factor).

(4) Subjects receiving desensitization methods will show more enduring and generalizing effects than subjects receiving insight procedures when tested twelve months after treatment (Followup).

METHOD

Sample

Seven Human Growth and Development classes, required for students in education at Western Michigan University, were contacted by the investigator to explain a program offered by the counseling center to relieve test anxiety in college students. Fifty-eight students volunteered for the study. Six students dropped out after assignment to treatments groups because of time limitations and other reasons.

All 58 Ss were told in an individual interview that their counselor, carefully trained for the program, would see them in groups of three for five sessions to "help relieve their anxiety over taking tests". All questions were answered in such a way so that the differential treatments would not be disclosed. All Ss then completed the imagery arousal inventory, a six item questionnaire designed to assess the ability of each individual to experience physiological arousal when imagining an emotional scene. During the interview the Ss were told to relax as much as possible and keep their eyes closed to facilitate "imagining"behavior. The Ss responses to six emotional situations were then read back to them, in a somewhat dramatic fashion. For example, "Think back, the last time you kissed someone who really turned you on...

They were asked to raise the number of fingers of their right hand to indicate the degree of physiological arousal felt when imagining each of the six scenes. The arousal score consisted of the sum of the six ratings with a possible range of from zero to thirty. Those Ss scoring above the median (17) were placed in the "high arousal" group, while those below the median were assigned to the "low arousal" group.

A table of random numbers was used to assign 24 Ss to the insight, 24 Ss to the desensitization and 10 Ss to the wait control group. The Ss in the wait control group were told that "because of space limitations, you will not be able to be seen this semester but the same counseling will be provided for you next semester". Two Ss dropped out prior to the final examination because they reported that "taking the test in the one way observation room makes me too anxious".

The no contact control group was comprised of 11 Ss randomly selected from another Human Growth and Development class not previously contacted. Ss were asked by their instructor to complete a test battery for a "research experiment" prior to midterm and final examination. Use of this no contact control group was an attempt to limit the non-specific attention effects occurring in other types of control groups.

Counselors

The two professional PhD-level counselors had at least four years of post-doctoral counseling experience as "insight" therapists but were inexperienced as behavior therapists and not familar with systematic desensitization. The two subprofessional counselors were chosen from a clinical psychology practicum class. Tapes of simulated counseling interviews in which each class member acted out "counselor-client" roles were rated by advanced doctoral students in counseling on the basis of warmth, empathy and understanding. The top two students were selected.

All four counselors were paid a nominal fee for their services and underwent a two-session training and coordinating session for insight methods led by one of the professional counselors, the director of the Western Michigan University Counseling Center. He discussed theoretical aspects of the test-anxious student and ways of relating to them. He emphasized that the client's emotional perception of life needed to be treated as well as his feelings about himself and others. In brief, close interpersonal relationships were encouraged and specific behavioral suggestions avoided.

A member of the Western Michigan University Psychology Department, experienced in systematic desensitization, conducted the two session desensitization

training program. He followed the format presented by Paul (1966) in which progressive relaxation is taught, followed by the construction of hierarchies and the pairing of relaxation with the imagination of the stimulus scene.

Figure 1 presents the overall design, procedure and time sequence of administering criterion measures and treatments.

The S-R Inventory of Anxiousness constructed by Endler, McV Hunt, and Rosenstein (1962), consists of 11 situations to which subjects rated their reactions, such as "You are entering a final examination in an important course" and "You are going into an interview for a very important job". These 11 different situations are concerned with experiences that may elicit anxiety.

The Test Anxiety Inventory (Thoresen, 1966) is a revision of a scale used by Emery and Krumboltz (1967) and has 34 items designed to measure degrees of reactions, on a five point scale, to the testing situation such as "My heart beats faster just as I start on an important test".

The Thayer Activation Deactivation Checklist uses activation and deactivation adjectives to measure physiological arousal. There are four factors: High Activation, General Deactivation, General Activation and Deactivation-Sleep, but only the High Activation and General Deactivation were considered appropriate for this investigation. The High Activation consisted of five adjectives "fearful", "intense" and "jittery , "stirred up" and "clutched up" while the General Deactivation adjectives were "at rest", "still" and "calm", "placid", "leisurely", "quiescent", and "quiet".

The Test Anxiety Rating (Thoresen, 1966b) is an eight point rating scale designed to measure Ss' self-report of anxiety during five stages of the examination; just before, at the beginning, in the middle, near the end and after completion of the test.

Pulse rate was used by Paul (1966) to measure physiological anxiety associated with speech anxiety. The pulse rates in this study were timed by a stopwatch for 30 seconds just prior to Ss taking midterm and final examinations. Recording the pulse rate consisted of the investigator firmly placing the middle three fingers of the left hand on the radial artery of the Ss right wrist.

The Observer's Checklist was developed by the author based on Paul's (1966) checklist to measure behavioral manifestations of speech anxieties. Observers were trained to watch for specific physical movements such as "chewing on nails", "fidgeting in chair", "scratching", "biting the lips", etc. The observers watched one preselected S for one-minute time spans, starting a stop watch when the S was engaged in these anxious behaviors and stopping it

FIGURE 1

Design and Procedure

Treatment Groups	Pre-treatment Battery N=69	Interview N=58	Pre-treatment Measures (Mid-term) N=58	Treatments N=44	Post-treatment Battery N=63	Post-treatment Measures (Final Exam) N=52
Desensitization	1)S-R Inventory of Anxiousness	1) Imagery Arousal Inventory	1) Thayer Adjective Checklist (High Activation and Deactivation only)	Desensitization and Insight Procedures by Professional and Sub-professional Counselors	1)S-R Inventory of Anxiousness	1) Thayer Adjective Checklist (High Activation and Deactivation only)
Insight	2)Test Anxiety Inventory	2) Interview to explain program	2) Test Anxiety Rating 3) Pulse Rate 4) Observers' Checklist		2)Test Anxiety Inventory	2) Test Anxiety Rating 3) Pulse Rate 4) Observers' Checklist
Wait Control						
No Contact Control						

when the S no longer manifested these behaviors. They recorded the total number of seconds during that one-minute time span that the S was observed engaging in anxious behavior. Another person used a separate stop watch to determine the one-minute observational time spans. The observers then shifted to another predetermined S and repeated the process.

Ss were informed that they would be taking their examinations in a room "more conducive for taking tests"; that is, a quieter and less distracting room. They were assigned a specific chair to help identify who they were while under observation. It was casually mentioned that proctors were behind the one-way mirrors in front of them so that their apprehensions of the unknown might be reduced. There was no evidence to suggest that Ss were aware of the main purpose of the testing arrangement, which was to observe anxious behavior. Only two Ss reacted unfavorably to the testing situation. They were both from the wait control group and requested permission to take the final examination in their original classroom. Their data were therefore dropped from the study.

All Ss were observed for at least six and not more than 20 one-minute time spans. The variability occurred because of the varying length of the different examinations. The mean number of seconds of anxious behavior was then computed for all Ss on the midterm and final examinations. The data collected on each S consisted of the mean number of seconds that the S manifested overt anxious behavior. Therapists also rated the anxiety-level of each S, with mean difference scores being computed between the first and fifth interviews. Finally, clients rated the extent to which (1) test anxiety was relieved (2) other anxieties were relieved (3) their counselor was competent and (4) the approach used was effective or not effective.

Treatment Procedures

All groups in both treatments met for five sessions, each session being about 45 minutes in length. The interviews were audio-taped with the investigator periodically reviewing the tapes to insure conformity to treatment procedures. The group insight methods generally sought answers to the question "Why?" and tried to help Ss gain insight into their "personal problems", which were not necessarily related to the testing situation. Affective, feeling-type responses were reinforced and their etiology examined. All the counselors felt that insight was an important goal and that five interviews were adequate for some changes to take place.

Group desensitization methods were clearly defined and standardized, consisting of essentially the same procedures used by Paul (1966). The beginning sessions were geared toward getting acquainted and explaining the approach to

be used, emphasizing that anxiety is learned and therefore can be unlearned, determining the situations in which they became anxious and building a hierarchy of these situations from the least to the most anxious test scene. These situations were then to be visualized while deeply relaxed. Three by five cards were passed out on which each client was to write his individualized hierarchies, one situation to each card.

All Ss were given a sheet explaining how to relax during the sessions as well as how to practice the exercises at home. The remaining interviews were spent going through the hierarchies. This was done by telling the Ss to place themselves in a relaxed state, look at the first card with the least anxious situation, close the eyes and imagine the situation. The therapist would state common relaxation suggestions to all Ss such as "imagine you are there... right not...relax...feel yourself in that situation...". If the S became anxious, he would signal by raising the index finger of his right hand. The therapist would then try to help that S relax. Each session consisted of imagining two to three cards each. The counselors were told to maintain a "warm and understanding relationship" with the Ss but to ignore topics of an "insight" nature. The counselors reported that all Ss completed all hierarchies in five sessions. Two Ss from the high arousal insight and two Ss from the high arousal desensitization groups dropped out due to time and emotional reasons. All four were from groups assigned to the professional counselors.

RESULTS

Facilities at the San Diego State College Computer Center were utilized to run t tests (Guilford, 1956, p. 220) and a 2x2x2 analysis of variance program derived from Winer (1962, 374-378) to handle unequal cell frequencies. Six Ss dropped out of the study during treatments; two from the high arousal professional desensitization group, two from the high arousal professional insight cell and two from the wait control group.

To assess the effectiveness of the treatment groups in reducing test anxiety, tests of significance of mean difference scores (change scores) between pre and post measures were used to determine if improvement for each treatment, counselor-level and arousal-level groups had occurred. That is, did treatments cause a significant improvement in Ss criterion scores?

To evaluate the control groups' effectiveness in controlling for the passage of time and extraneous variables, t tests were computed on the significance of the mean difference in pre-test and post-test criterion scores. The t tests were then compared with the t tests for the treatment groups by observation.

Results of S-R Inventory of Anxiousness

Tables 1 and 2 present the t test and F ratios for the most relevant of the 11 situations, "You are entering a final examination in an important course". None of the F ratios reached the .05 level of significance but the desensitization and subprofessional groups did achieve a significant decrease, at the .05 level, in mean difference scores.

The remaining 10 situations, concerned with reactions to anxieties such as intra- and interpersonal threats, are presented in Appendix A. Of these, eight showed the desensitization group reaching the .01 or .05 level of significance. The groups receiving insight methods did not achieve a significant t score on any of the eleven variables. Groups counseled by the subprofessional showed slightly more of an improvement than the professional counselors, by reaching either the .01 or .05 level of significance on five situations. Groups led by professional counselors did not show any significant change. There was little difference between the high and low imagery arousal groups, both groups achieving significance on two different situations.

Table 2 shows that F ratios did not reach significance for "You are entering a final examination in an important course." However, two other situations "You are going into an interview for a very important job" and "You are starting out in a sailboat on a rough sea", (Appendix A, Tables II and VIII) did favor the desensitization treatment by reaching the .05 level of significance.

Two interactions occurred (Tables XII and XX). One favored the subprofessional counselors using desensitization methods and the other was in the direction of the professional counselors also using desensitization methods with high arousal clients, though. No other F ratio reached the .05 level of significance. Three interpersonal situations, Tables II, VI and XVIII, showed desensitization and subprofessional groups to be slightly, but not significantly superior.

Results of Test Anxiety Inventory

Table 3 shows two-sided tests of significance for mean change scores reaching either the .05 or .01 level for all treatments except the high arousal group. This instrument was designed to measure Ss self-report of felt anxiety and physical reactions associated with taking tests. No significant F ratios were found (Table 4) but two achieved the .10 level in the direction of the low arousal and desensitization groups.

TABLE 1

S-R INVENTORY OF ANXIOUSNESS

"You are entering a final examination in an important course"

MEANS, STANDARD DEVIATIONS AND t VALUES
FOR MEAN DIFFERENCE SCORES[1]

		Means			Standard Deviations		
	Variables	Pre	Post	Difference	Pre	Post	t
A	Desensitization	40.15	35.45	4.70	7.39	7.40	2.56*
	Insight	39.35	37.45	1.90	9.49	10.13	1.17
B	Professional Counselors	38.78	36.42	2.36	7.30	7.71	1.68
	Subprofessional Counselors	40.61	36.47	4.14	9.38	9.90	2.09*
C	High Arousal Level	39.52	35.76	3.76	7.73	10.32	1.76
	Low Arousal Level	39.91	36.95	2.96	9.04	7.72	1.99
	Wait Control	43.12	43.37	-.25	6.79	5.73	-.18
	No Contact Control	33.72	32.72	1.00	9.06	10.80	.48

* = P .05

[1]Total N for Variables A, B, and C = 44

TABLE 2

ANALYSIS OF VARIANCE TABLE FOR THE DIFFERENCES
BETWEEN MEAN DIFFERENCE SCORES

Source of Variance	Sum of Squares	Degrees of Freedom	Variance Estimate	F Ratio
A Treatments	87.07	1	87.07	1.46
B Counselors	27.46	1	27.46	.46
C Arousal Level	4.72	1	4.72	.07
AB	173.34	1	173.34	2.91
AC	97.17	1	97.17	1.63
BC	15.42	1	15.42	.23
ABC	.01	1	.01	.00
Within	1901.50	36	59.42	1.00
Total	2306.69	43		

TABLE 3

TEST ANXIETY INVENTORY[1]

MEANS, STANDARD DEVIATIONS AND t VALUES
FOR MEAN DIFFERENCE SCORES

	Variables		Means			Standard Deviations		
			Pre	Post	Difference	Pre	Post	t
A	Desensitization		114.35	99.10	15.25	16.02	16.96	5.07**
	Insight		118.00	109.19	8.81	22.82	29.59	2.23*
B	Professional Counselors		116.26	104.47	11.79	18.83	20.77	3.38**
	Subprofessional Counselors		116.18	104.09	12.09	20.76	27.82	3.29**
C	High Arousal Level		115.11	107.22	7.89	18.39	29.65	1.73
	Low Arousal Level		117.08	101.95	15.13	20.94	20.00	5.75**
	Wait Control	N=8	121.87	122.25	.38	21.86	15.11	-.08
	No Contact Control	N=11	91.45	89.18	2.27	22.79	24.93	.96

*= p .05
**= p .01
[1]Total N for Variables A, B, and C = 44

TABLE 4

ANALYSIS OF VARIANCE TABLE FOR THE DIFFERENCES
BETWEEN MEAN DIFFERENCE SCORES

Source of Variance	Sum of Squares	Degrees of Freedom	Variance Estimate	F Ratio
A Treatments	583.67	1	583.67	2.26
B Counselors	6.07	1	6.07	.02
C Arousal Level	522.66	1	522.66	2.02
AB	77.38	1	77.38	.30
AC	735.37	1	735.37	2.85
BC	91.69	1	91.69	.35
ABC	14.15	1	14.15	.05
Within	8497.40	36	257.49	1.00
Total	10528.39	43		

Results of Test Anxiety Rating Scale

All treatment groups reached the .01 level of significance on the change score analysis (Table 5). Groups led by professional counselors showed marked improvement (.001) in change scores reflecting a significant F ratio favoring the professional treatment when compared with the subprofessional group (Table 6). No other source of variance revealed significant F ratios, due to all groups improving significantly from their pre to post test scores.

Results of Thayer Activation Deactivation Checklist

Tables 7 and 8 reveal that all treatments significantly decreased their mean scores at the .01 level. This change in pre-post mean scores could have occurred by chance only one time in a hundred. The analysis of variance however showed low F ratios, none approaching significance.

Results of Observers' Checklist

Observers' Checklist, Tables 9 and 10, discloses that the desensitization and low arousal groups were the only groups to reach the specified .05 level of significance on this motoric scale. The clear contrast between the high and low arousal groups is reflected in the significant F ratio of 6.11, favoring the low arousal group. The high arousal group actually increased their mean change scores while the low arousal Ss' post mean score was one-half of the pre mean score.

Results of Pulse Rate

Tables 11 and 12 indicate that Pulse Rate was the only criterion measure in which the insight group showed more of a mean decrease in change scores than the desensitization group. Both groups showed a significant decrease but the insight group reached the .01 level of significance. The only group that did not reach at least the .05 level was the low arousal group. F ratios showed that the insight and high arousal groups slightly, but not significantly, outperformed their counterparts.

Results of Therapists' Ratings

Therapists' ratings consisted of the difference between the first and fifth interview mean ratings of client anxiety level. Table 13 shows that there were no significant differences between treatment, counselor-level or arousal-level groups. Significant differences would be extremely difficult to achieve because of the small spread in ratings; that is, change score ratings consistently of "1" or at the most "2".

Results of Client Ratings

Client ratings, Table 14, reveals a significant difference for student ratings of the degree to which they had been helped with their anxiety over tests. Desensitization methods were rated significantly more helpful, at the .01 level, than insight methods. Also, Ss receiving desensitization techniques rated "Help with other anxiety" significantly higher, .05 level, than Ss who received insight procedures (Table 15). There were no other significant differences recorded for client ratings.

TABLE 5

TEST ANXIETY RATING SCALE[1]

MEANS, STANDARD DEVIATIONS AND t VALUES
FOR MEAN DIFFERENCE SCORES

	Variables	Means			Standard Deviations		
		Pre	Post	Difference	Pre	Post	t
A	Desensitization	18.85	13.61	5.24	5.44	2.95	4.19**
	Insight	22.13	17.27	4.86	6.58	6.32	3.76**
B	Professional Counselors	21.31	14.26	7.05	6.51	4.34	5.94***
	Subprofessional Counselors	19.91	16.45	3.46	6.02	5.77	2.85**
C	High Arousal Level	20.78	15.94	4.84	7.34	6.56	3.45**
	Low Arousal Level	20.33	15.12	5.21	5.29	4.04	4.45**
	Wait Control N=8	23.87	23.12	.75	4.76	4.25	.38

** = p< .01

*** = p< .001

[1] Total N for Variables A, B, and C = 44

TABLE 6

ANALYSIS OF VARIANCE TABLE FOR THE DIFFERENCES
BETWEEN MEAN DIFFERENCE SCORES

Source of Variance	Sum of Squares	Degrees of Freedom	Variance Estimate	F Ratio
A Treatments	3.19	1	3.19	.08
B Counselors	150.10	1	150.10	4.20*
C Arousal Level	1.26	1	1.26	.03
AB	2.74	1	2.74	.07
AC	.35	1	.35	.00
BC	20.88	1	20.88	.58
ABC	11.40	1	11.40	.31
Within	1250.75	36	35.73	1.00
Total	1440.67	43		

* = p< .05

TABLE 7

THAYER ACTIVATION-DEACTIVATION CHECK LIST[1]

MEANS, STANDARD DEVIATIONS AND t VALUES
FOR MEAN DIFFERENCE SCORES

		Means			Standard Deviations		
	Variables	Pre	Post	Difference	Pre	Post	t
A	Desensitization	32.42	27.04	5.38	5.29	6.03	4.10**
	Insight	33.19	27.80	5.39	7.24	10.08	2.84
B	Professional Counselors	32.36	27.89	4.47	7.35	6.28	3.34**
	Subprofessional Counselors	33.17	27.04	6.13	5.38	9.65	3.46
C	High Arousal Level	32.75	27.40	5.35	4.90	7.40	4.13**
	Low Arousal Level	32.86	27.45	5.41	7.42	9.07	2.91
	Wait Control N=8	32.12	31.37	.75	7.23	6.92	.27

** = $p < .01$

[1] Total N for Variables A, B, and C = 44

TABLE 8

ANALYSIS OF VARIANCE TABLE FOR THE DIFFERENCES
BETWEEN MEAN DIFFERENCE SCORES

Source of Variance	Sum of Squares	Degrees of Freedom	Variance Estimate	F Ratio
A Treatments	.31	1	.31	.00
B Counselors	27.24	1	27.24	.43
C Arousal Level	.00	1	.00	.00
AB	3.77	1	3.77	.06
AC	23.23	1	23.23	.37
BC	36.22	1	36.22	.57
ABC	.51	1	.51	.00
Within	2132.50	36	62.72	1.00
Total	2223.78	43		

TABLE 9

OBSERVERS' CHECKLIST[1]

MEANS, STANDARD DEVIATIONS AND t VALUES
FOR MEAN DIFFERENCE SCORES

	Variables	Means			Standard Deviation		
		Pre	Post	Difference	Pre	Post	t
A	Desensitization	13.83	8.05	5.78	11.27	6.57	2.19*
	Insight	14.00	11.13	2.87	7.88	10.88	1.36
B	Professional Counselors	14.47	9.23	5.24	9.57	10.43	1.76
	Subprofessional Counselors	13.52	10.13	3.39	9.51	8.44	1.78
C	High Arousal Level	12.83	12.94	-.11	7.69	11.50	-.04
	Low Arousal Level	14.81	7.13	7.68	10.74	5.91	4.07**
	Wait Control N=8	13.12	11.25	1.77	7.07	7.47	.64

*= p< .05
**= p< .01
[1]Total N for Variables A, B, and C = 44

TABLE 10

ANALYSIS OF VARIANCE TABLE FOR THE DIFFERENCES
BETWEEN MEAN DIFFERENCE SCORES

Source of Variance	Sum of Squares	Degrees of Freedom	Variance Estimate	F Ratio
A Treatments	78.76	1	78.76	.76
B Counselors	19.00	1	19.00	.18
C Arousal Level	630.99	1	630.99	6.11*
AB	.09	1	.09	.00
AC	48.36	1	48.36	.46
BC	27.47	1	27.47	.26
ABC	38.14	1	38.14	.36
Within	3404.36	36	103.16	1.00
Total	4247.17			

*= p< .05

TABLE 11

PULSE RATE[1]

MEANS, STANDARD DEVIATIONS AND t VALUES
FOR MEAN DIFFERENCE SCORES

	Variables	Means			Standard Deviation		
		Pre	Post	Difference	Pre	Post	t
A	Desensitization	44.81	41.09	3.72	5.68	7.30	2.30*
	Insight	43.59	37.86	5.73	6.52	5.95	3.81**
B	Professional Counselors	43.60	38.40	5.20	5.95	6.01	4.44**
	Subprofessional Counselors	44.70	40.37	4.33	6.27	7.37	2.42*
C	High Arousal Level	45.90	39.10	6.80	6.34	7.49	4.74**
	Low Arousal Level	42.79	39.79	3.00	5.59	6.27	1.90
	Wait Control N=8	42.37	39.12	3.25	7.99	5.35	1.39

*= $p < .05$
**= $p < .01$
[1]Total N for Variables A, B, and C = 44

TABLE 12

ANALYSIS OF VARIANCE TABLE FOR THE DIFFERENCES
BETWEEN MEAN DIFFERENCE SCORES

Source of Variance	Sum of Squares	Degrees of Freedom	Variance Estimate	F Ratio
A Treatments	60.16	1	60.16	1.14
B Counselors	10.66	1	10.66	.20
C Arousal Level	143.40	1	143.40	2.72
AB	.16	1	.16	.00
AC	8.16	1	8.16	.15
BC	58.07	1	58.07	1.10
ABC	121.50	1	121.50	2.30
Within	1894.50	36	52.62	1.00
Total	2296.61	43		

TABLE 13

MEANS, STANDARD DEVIATIONS AND t VALUES FOR DIFFERENCES BETWEEN FIRST AND FIFTH INTERVIEW THERAPISTS' MEAN RATINGS OF "CLIENT ANXIETY" LEVEL[1]

Group	Means	Standard Deviations	t
Desensitization	1.13	.88	.00
Insight	1.36	1.03	
Professional	1.30	.80	1.01
Subprofessional	1.00	1.06	
High Arousal	1.25	.85	.70
Low Arousal	1.04	1.04	

[1] Total N for Groups = 44

TABLE 14

MEANS, STANDARD DEVIATIONS AND t VALUES FOR CLIENT RATINGS (3, 2, 1, 0) "HELP WITH TEST ANXIETY"[1]

Group	Means	Standard Deviations	t
Desensitization	1.75	.85	2.87**
Insight	1.04	.66	
Professional	1.31	.74	.51
Subprofessional	1.45	.91	
High Arousal	1.50	.78	.72
Low Arousal	1.30	.87	

[1] Total N for Groups = 44

** = $p < .01$

TABLE 15

MEANS, STANDARD DEVIATIONS AND t VALUES FOR CLIENT RATINGS (3, 2, 1, 0) "HELP WITH OTHER ANXIETY"[1]

Group	Means	Standard Deviations	t
Desensitization	1.75	.96	2.39*
Insight	1.14	.57	
Professional	1.42	.83	.12
Subprofessional	1.45	.85	
High Arousal	1.50	.78	.72
Low Arousal	1.30	.87	

[1]Total N for Groups = 44
*= p .05

Analyses of variance were computed on all pre criterion measures except the S-R Inventory of Anxiousness. This was done to determine if there were any significant differences between treatment groups after exposure to the treatments. In spite of random assignment, it was not known whether or not there were significant differences before the treatments were administered. Results yielded only one significant F ratio, and that barely reached the .05 level on the Test Anxiety Rating Scale. Additional analysis showed that on all criterion measures, except the Test Anxiety Rating Scale, there were no significant F ratios on post treatment analysis of variance. The Test Anxiety Rating Scale did show a significant F ratio favoring the Desensitization group. It should be pointed out that throughout this investigation, change scores were used which would tend to invalid this discrepency; that is, a high pre score would cancel out a higher post score effect.

Control Groups

The no-contact control group significantly improved their pre-post change score on only one criterion measure, the S-R Inventory of Anxiousness situation "You are starting out in a sailboat in a rough sea". The wait control group did not significantly improve their scores on any of the criterion instruments. In fact, both control groups actually increased their scores slightly on a few measures.

Control for Sex Variable

To investigate whether sex differences produced a contaminating effect on these data, t tests were run on the mean of the differences between pre and post treatment measures for males and females. There were no significant differences between male and female scores on all criterion measures. Even though females (50) outnumbered the males (13), and all treatment counselors were males, the sex factor did not seem to adversely influence the results.

DISCUSSION

Treatment Factor

The principle hypothesis tested in this investigation, Hypothesis One, stated that groups receiving systematic desensitization procedures will show a significantly greater decrease in criterion scores than groups receiving insight counseling. The data presented above provide support for accepting this hypothesis. Desensitization methods produced a more consistent measureable reduction in the cognitive and motoric aspects of anxiety, when compared with insight procedures.

Acceptance of this hypothesis is qualified however for the physiological measurement, Pulse Rate. Insight procedures apparently produced slightly more of an improvement than desensitization methods when Pulse Rate is used as a criterion measure. This was a rather unexpected outcome considering the physiological relaxation exercises emphasized by desensitization techniques.

The only other measure in which mean scores favored the insight treatment was the Therapists' Rating Scale, which showed a slight superiority in rated effectiveness, 1.36 to 1.13. This resulted in a t value of only .00 though a difference could well be anticipated because all four counselors acknowledged prior to treatment that they viewed client change as resulting from "being aware of one's relationships with others". Yet, the counselors reported that they also noted a "remarkable change" in clients who were assigned to their desensitization groups.

On all criterion measures tested, except the two listed above, groups receiving desensitization methods tended to improve their pre-post mean scores more than groups receiving insight techniques. Analysis of variance data indicated that desensitization procedures resulted in significant F ratios on two situations of the S-R Inventory of Anxiousness while all of the remaining nine situations showed F ratios in the direction of desensitization. None favored the insight method.

The remaining primary dependent variables, Test Anxiety Inventory, Test Anxiety Rating Scale, Thayer Activation-Deactivation Checklist, Observers' Checklist and Pulse Rate, did not show significant F ratios between treatments, while t values indicated that both the desensitization and insight groups recorded significant decreases in their change scores. The desensitization treatment mean change scores were greater on all measures except Pulse Rate.

Student ratings supported the acceptance of Hypothesis One by yielding significant differences in mean ratings of help with test anxiety and help with other anxiety. Counselors reported that clients in the desensitization group described how they had been less anxious when on dates, giving speeches and talking with their parents as a result of learning systematically, less anxious ways of responding. This generalized effect was not reported for the insight group.

Perhaps the differences would have been more distinct if more interviews and a larger number of subjects would have been included in the design. Also, in place of accommodating the biases in favor of insight methods, using skilled practioners in systematic desensitization to administer both treatments might cause an even greater discrimination between procedures.

Because eight criterion measures were used in this study, no one dependent variable can be used to accept or reject the research hypothesis. However, desensitization techniques were superior when self-reports of specific and generalized anxiety and behavioral manifestations of anxiety were evaluated. That is, six of the eight dependent variables showed desensitization groups improving more than insight groups. Insight subjects, though, slightly outperformed desensitization subjects on the lone physiological measurement, Pulse Rate, and on Therapists' Ratings.

The overall analysis of the data suggests that the desensitization method produced a significantly greater decrease in criterion scores than groups receiving insight counseling, thereby permitting Hypothesis One to be supported and accepted.

Counselor-level Factor

Research Hypothesis Two, stating that there will be no significant differences in mean change scores between groups led by professional counselors and groups led by subprofessional counselors, is accepted with some qualification. On all situations of the S-R Inventory of Anxiousness, there were no significant differences between professional and subprofessional groups. However, the mean change scores showed slightly greater decreases favoring the subprofessional counselors. Yet, the Test Anxiety Rating Scale yielded a significant F ratio (4.20) in the direction of the professional

counselors. Therapists' Ratings also favored the professional counselors but perhaps experienced counselors tend to overrate their success as compared with inexperienced counselors. Client Ratings "How competent the counselor" and "How helpful the approach" presented some supportive data for the professional group. On all the other criterion measures, Test Anxiety Inventory, Thayer Activation-Deactivation Checklist, Observers' Checklist, and Pulse Rate, there were negligible differences between the two groups.

One explanation for the higher ratings by subjects treated by the professional counselors is that they were quite competent and experienced when contrasted to uncertain counselor-trainees. Presenting a relaxed and confident model does permit the counselor to have a settling and positive effect on clients. In addition, the professional counselors were older, and mentioned to their group that they were "Dr. Davis" and "Dr. Cudney", staff members at the Counseling Center. The contrasting implicit credentials of the professional and subprofessional counselors suggest that the professional counselors should be more effective due to their "experienced counselor" image. This difference, of course, was not validated in the present study. These findings do point out the importance of using multiple outcome criteria. The question also emerges as to whether Client Ratings of "competence" and behavior change are related.

In summary, the data presented do indicate that the differences between the professional and subprofessional groups were so minute that Hypothesis Two would have to be accepted.

Arousal-level Factor

Research Hypothesis Three states that high imagery arousal subjects will show a significantly greater decrease in criterion scores when compared with low imagery arousal subjects. This hypothesis is rejected. In fact, the low arousal subjects slightly but not significantly, outperformed the high arousal subjects.

The only clear differences between the two groups appeared on the Observers' Checklist and Pulse Rate. Observation of motoric aspects of stress-induced behavior, mid-term and final examinations, produced a significant F ratio of 6.11, indicating that the low arousal subjects materially reduced their anxious movements while taking tests. Observation of the Pulse Rate measures showed that high arousal subjects substantially, but not significantly, improved their pre-post mean physiological scores while taking examinations. Improvements on the other criterion measures were minimal and insignificant.

One apparent criticism of the arousal factor is that the method used in chosing the subjects for the high and low groups was not objective and distinct. Subjects raised the number of fingers that indicated the "degree" of anxiety felt when an emotional situation was presented to them. Objective measurement of this factor was, and is, difficult. The manner of assessing the degree of arousal would lead to a within-subject ordinal scale and not a between-subject scale. Idiosyncratic perceptions of a "great deal of anxiety" vary considerably between subjects. Also, high arousal subjects clustering around the mean were in fact little different from similar subjects who were assigned to the low arousal group. The ordering of the subjects was not a clear and discriminative process. This may well account for the lack of differentiation between the high and low arousal subjects, as theorized by the Research Hypothesis.

Assuming that polarity did exist in arousal level, the high arousal subjects' improvement on the physiological measurement, Pulse Rate, could have occurred because they had a wider range of anxiety to improve upon. The high arousal subjects showed a t test score of 4.74, significant at the .01 level. The F ratio did approach significance (2.72). Physiological improvement seemed to be greater with high arousal subjects because they were more anxious to begin with. Yet, they apparently didn't manifest the anxiety, as evidenced by the slight increase in the Observers' Checklist means. The low arousal subjects might have been more cognitively oriented and not able to "show" their anxiety as much. The explanations are speculative and need further empirical data to validate them. There were no indications that either the high or low arousal subjects tended to benefit more from desensitization or insight methods because interactions were nonexistant.

Therefore, Research Hypothesis Three is rejected indicating that the high arousal subjects did not improve significantly greater than low arousal subjects. The suggestion is made that low arousal subjects even slightly outperformed the high arousal subjects.

Control Groups

Neither the wait control nor the no contact control groups showed an overall significant decrease in pre vs. post mean criterion scores, thereby successfully controlling for passage of time and extra-interview influences.

The no contact control group, completing the S-R Inventory of Anxiousness and the Test Anxiety Inventory, were told only that the battery was for "research purposes" so that the effect of non-treatment procedures could be limited. This control group did not have to be exposed to attention-giving situations like interviews, phone calls, assignments to groups, explanations of the program, assessments of imagery arousal level and a general promise

of "help". Their mean scores were slightly lower than the wait control and treatment groups because they were not seeking help for test–anxious behavior. One situation "You are starting out in a sailboat on a rough sea" did reach significance at the .05 level (2.82) but the remaining measures indicated no significant change from pre to post mean scores.

The wait control results were even more uniform and unchanged. Two subjects dropped out prior to the final evaluation because they felt that taking the final examination in the special room made them too anxious. If they had been included in the final analysis, they may have influenced the group mean scores in a different direction. Also, with only eight subjects, considerable error enters into the analysis of the data. Further experimentation would dictate a larger number of wait control subjects.

SUMMARY AND IMPLICATIONS

Summary

This study was designed to compare the effect of professional and subprofessional counselors using group insight and group systematic subjects. The basic plan was to determine if test anxiety could be reduced for all treatment groups, and to ascertain to what extent which treatment, group desensitization or group insight, administered by which type of counselor, professional or subprofessional, assisted clients in reducing test and other anxiety.

The findings of this study demonstrated that group systematic desensitization counseling techniques were more effective in reducing test, and other, anxiety in college students than traditional, psychodynamic group counseling methods based on client awareness and insight. Also, the use of subprofessionally-trained counselors was effective in treating students with examination anxiety. The ability to physiologically arouse anxiety when emotional scenes are imagined did not appear to be a requisite characteristic of successful clients in either desensitization of insight counseling models.

The major conclusions of this study are as follows:

1. Group systematic desensitization methods caused a significantly greater decrease in mean change scores than traditional group insight procedures on the following measures: The S-R Inventory of Anxiousness, the Test Anxiety Inventory and Client Ratings of the "Help received with test anxiety" and "Help received with other anxiety" clearly favored the group desensitization treatment. While the group insight methods did produce a significant reduction in change scores on Pulse Rate, Test Anxiety Inventory,

Test Anxiety Rating Scale and Thayer Activation-Deactivation Checklist, only Pulse Rate favored, but not significantly, insight procedures when the two treatments were contrasted.

2. Groups led by subprofessional counselors were in general as effective as groups led by professional counselors. There was some variability in the data however. The S-R Inventory of Anxiousness favored the subprofessional counselors while the Test Anxiety Rating Scale indicated that the professional counselors did significantly better. The remaining dependent variables, the Test Anxiety Inventory, Thayer Activation-Deactivation Checklist, Pulse Rate, and Observers' Checklist failed to suggest an advantage for either group.

3. High imagery arousal subjects did not show a significantly greater decrease in change scores when compared with low imagery arousal subjects. In fact, low imagery arousal subjects tended to do slightly better than high imagery arousal students. It appears that the degree to which clients physiologically re-experience images does not determine success or failure in counseling. More sensitive techniques for assessing level of arousal need development.

4. Experimental groups showed a significant decrease in mean change scores on all of the criterion measures. Therefore, the group treatments can be interpreted as being successful in reducing test anxiety in college students.

5. Effects of giving attention to some students, for example, in assignments to groups in testing, and in a general promise of relief (wait-control procedures), were not found. Scores for these students remained essentially the same. Passage of time and other external influences were controlled due to the absence of change in the no contact control group mean change scores.

Implications

While student pressures and anxieties connected with taking examinations seem to be increasing in our colleges and universities, clearly defined therapeutic methods to deal with this problem have been largely non-existent. Theoretical assumptions concerning behavior change, such as reducing test, or other anxiety, have been based generally on the psychodynamic, traditional approaches which stress insight. This study however was designed to evaluate in part, the feasibility of following specific treatment methods based on principles of social learning to relieve test anxiety in college students in comparison to more general treatment methods based on insight and understanding.

Information is needed to supplement Paul's (1966) seminal study in ascertaining whether therapeutic procedures, like desensitization, will result in a significant reduction in test, and other types of anxieties. Reports of group approaches using desensitization methods have been sparse. By using counselor support personnel to apply specific techniques, professional counselors will be available for more complicated activites. In addition, data and experimentation is needed concerning various types of criterion measures so that the success of counseling can be more objectively evaluated. Motoric, physiological and traditional self-report measures need to be compared and contrasted.

The results of this study seem to present the following implications:

1. Counselors without prior training in systematic desensitization, nor preference for it, can effectively carry out the treatment resulting in significant improvements in stated, observed and measured behaviors.

2. When the behaviors to be changed are clearly delineated, evaluation and treatment are more successfully carried out.

3. Personnel not trained professionally in a traditional sense are able to effectively change students behavior without going through extensive and often irrelevant training programs now in existance. Professionally-trained counselors can therefore give their attention to more unique and difficult problems presented by clients.

4. Counseling for behavior change can be a systematic procedure rather than a disorganized and extensive venture. It has been shown that changes can result from a limited treatment time of five interviews, casting doubt on the necessity for long term counseling contacts.

5. Group procedures can effectively produce behavior change. This permits more economical use of professional and subprofessional counselor time. With the increased demand for counseling services in our colleges and universities, more efficient methods are needed to accommodate client demands.

6. Evaluative measures should not rely exclusively on self-report of client satisfaction but rather multiple criterion measures should be utilized. Even though clients report that they were "helped", they may in fact not really know to what extent and how their behavior has changed.

7. Counselors need to ask the question "What type of treatment is needed for this type of client, to accomplish what?", rather than use essentially

one method with all clients regardless of the specific problem. Because of the uniqueness of humans, different methods are needed to change different types of client problems.

8. Counselor educators can successfully teach systematic desensitization methods to counselors in training, in addition to the standardization and traditional models of psychodynamic procedures now almost exclusively emphasized in graduate training. By providing trainees the interpersonal experience of teaching relaxation and desensitization methods, experience is gained by trainees which reduces their usual anxieties accompanying counselor-client contacts.

9. Practitioners should consider viewing maladaptive behavior and emotional disturbances as being successfully treated via emotional re-education and behavior techniques, rather than applying psychodynamic models in counseling, to the exclusion of alternative methods.

10. A reduction in client anxiety level tends to reduce other anxious behaviors in client's lives. Therefore, when subjects experience a reduction in anxiety in one specific situation, they tend to apply the methods to other similar stresses in their lives.

TWELVE MONTH FOLLOWUP

Method

To investigate the enduring effects of the primary treatments, systematic desensitization and insight therapy, all Ss were contacted one year later. Because no differences were found between the professional and subprofessional groups, and the high and low imagery arousal groups, the counselor-level and arousal-level factors were not included in the followup analysis. Approximately one-half of the original Ss, 14 from the insight, 12 from the desensitization and seven from the no-contact control groups, completed the S-R Inventory of Anxiousness, Test Anxiety Inventory, and Test Anxiety Rating Scale. The remaining Ss had either left school or did not wish to participate in the followup study. Ss were asked to complete the S-R Inventory of Anxiousness and the Test Anxiety Inventory at home and to fill out the Test Anxiety Rating Scale immediately after taking their final examinations.

The no contact control group did not complete the Test Anxiety Rating Scale during the original pre-post testing so their scores could not be included in the followup. Only one out of eight Ss from the wait control group completed the followup data, thereby necessitating exclusion from the analysis.

To obtain more in-depth information concerning satisfaction and generalization of treatment effects, 12 Ss were interviewed individually, six from the insight and six from the desensitization group. Each group consisted of the extreme three Ss in that group; i.e., the three insight and desensitization Ss who showed the highest change scores on the Test Anxiety Inventory as well as the three insight and desensitization Ss who recorded the lowest change scores. In this way high, as well as low, scores could be examined. The interviewer requested estimates, or ratings, one year after treatment, of (1) test anxiety present at the end of that semester, (2) anxiety level in other situations, and (3) satisfaction concerning number of meetings held, size of group, helpfulness of methods, and generalization of effects to non-test situations. In addition, while the interviewer was interviewing the subject, an assistant was filling out a modified form of the Observers' Checklist by casually recording frequencies of Ss facial, shoulder, arm and hand movement so the behavioral manifestations of anxiety might be evaluated.

Results

Tables 16 through 19 show the two-tailed t test scores on the pre vs followup mean scores for all eleven variables of the S-R Inventory of

Anxiousness, the Test Anxiety Inventory and the Test Anxiety Rating Scale. The Thayer Activation-Deactivation Checklist was administered but seven scores were imcomplete so it was not included in the analysis. By using the pre vs followup, instead of the post vs followup, an attempt was made to more accurately look at the enduring aspects of the two treatments. A longer time span can therefore be studied and consideration given to the original level of functioning of the groups. The results of these data however, must be seen as tentative and incomplete because only 33 of the original 63 Ss were available and only some of the dependent variables included in the original study were able to be used.

Pre mean scores on all variables for the 33 Ss in the followup study were recomputed because it was believed that the pre mean scores for the original total of 63 Ss would probably be somewhat different. In fact, the pre mean scores for the Ss in the original study and the pre mean scores for the Ss in the followup study were observed and compared. In general, there were marked discrepancies on only one situation of the S-R Inventory of Anxiousness, "You are going to a counseling bureau to seek help in solving a personal problem". On this variable, the followup group tended to show a higher mean pre score, varying between 7 and 13 points for the insight, desensitization and no contact control groups, than the original group. The other variables showed differences of a few points.

Table 16 indicates that for the Ss receiving the insight treatment, only the Test Anxiety Inventory showed a marked difference or improvement between the pre and followup means. This was statistically significant at the .01 level. All but three measures did decrease their scores, indicating a very slight, but insignificant, long term improvement of the pre vs followup results for the insight group.

The results of the desensitization group, shown in Table 17, indicate that the Test Anxiety Inventory and two situational variables from the S-R Inventory of Anxiousness "contest" and "counseling" reached the .05 level of significance, the latter situation reaching the .01 level. Several other measures, "test anxiety", "interview", and "woods", came close to achieving the .05 level. All variables though showed some decrease, or improvement, in mean scores 12 months later for the Ss receiving the desensitization method.

Data contained in Table 18 show that the no contact control group Ss improved on only one variable, with no t score approaching significance. They did not improve or get worse, as a result of the passage of time and extraneous variables, thereby providing an adequate control for these influential effects.

TABLE 16

MEANS AND t VALUES FOR PRE VS FOLLOWUP
INSIGHT GROUP (N=14)

Variable	Pre	Followup	t Score
S-R Inventory of Anxiousness			
"Final Exam"	35.78	30.28	1.41
"Interview"	35.85	31.78	1.14
"Woods"	35.14	34.50	0.14
"Control"	36.57	36.50	0.01
"Sailboat"	32.78	33.85	0.31
"Speech"	33.85	32.92	0.21
"Ledge"	40.21	39.78	0.10
"Counseling"	42.35	41.42	0.19
"Experiment"	30.21	27.92	0.89
"New Data"	29.71	31.78	0.65
"Auto Trip"	20.07	21.50	0.55
Test Anxiety Inventory	113.57	91.85	4.29 **
Test Anxiety Rating Scale	20.35	18.07	1.69

** = p .01

TABLE 17

MEANS AND t VALUES FOR PRE VS FOLLOWUP
DESENSITIZATION GROUP (N=12)

Variable	Pre	Followup	t Score
S-R Inventory of Anxiousness			
"Final Exam"	40.00	33.83	1.94
"Interview"	36.00	31.25	2.01
"Woods"	39.75	34.91	2.19
"Control"	41.33	35.75	2.42*
"Sailboat"	36.91	30.91	1.82
"Speech"	36.91	34.58	1.15
"Ledge"	41.08	38.25	1.49
"Counseling"	46.50	39.08	3.51**
"Experiment"	30.66	28.08	1.07
"New Data"	33.33	29.50	1.69
"Auto Trip"	24.08	21.91	0.98
Test Anxiety Inventory	114.08	97.58	2.89*
Test Anxiety Rating Scale	18.33	17.58	0.45

*= p .05
**= p .01

TABLE 18

MEANS AND t VALUES FOR PRE VS FOLLOWUP
NO CONTACT CONTROL GROUP (N=7)

Variable	Pre	Followup	t Score
S-R Inventory of Anxiousness			
"Final Exam"	33.00	35.42	0.45
"Interview"	32.85	35.00	0.60
"Woods"	42.42	44.00	0.28
"Control"	36.42	39.85	0.71
"Sailboat"	44.00	39.85	0.72
"Speech"	31.28	36.00	1.04
"Ledge"	35.57	39.42	0.69
"Counseling"	47.71	48.00	0.08
"Experiment"	23.42	28.57	0.88
"New Data"	28.14	30.71	0.68
"Auto Trip"	20.14	22.14	0.56
Test Anxiety Inventory	87.00	93.85	0.78

Table 19 compares the mean change scores on the pre vs followup data for the desensitization group with the insight group. No significant differences were found between the two treatments, even at the .10 level (1.711 was needed). The data show that only the Test Anxiety Inventory and the Test Anxiety Rating Scale, favored the insight groups more than the desensitization group. In other words, the desensitization group showed more of a mean change improvement (in pre-followup scores on 11 of the 13 criterion measures) than the insight group. Only the Test Anxiety Inventory and the Test Anxiety Rating favored the insight Ss. The t scores indicated very small statistical differences between the two groups, however.

It can also be pointed out that all 11 situations of the S-R Inventory of Anxiousness showed very small t scores, not even approaching the .10 level of significance (1.71). In effect, after 12 months, using these measures as criterion, there appeared to be little difference between Ss who received insight methods and Ss who received desensitization procedures. The discrepancies are quite small when compared with the differences recorded in the original pre-post study.

To investigate if there was any significance in the pattern of mean change scores which favored the desensitization group, Hotellings T^2 (Winer, pp 632-635) was computed. An F value of .579 was found but 2.56 was needed to be significant at the .05 level. Therefore, the directional pattern apparently favoring the desensitization group did not approach significance.

The main purpose of the interview was to obtain subjective data on the impressions of the treatment 12 months later. Both the insight and desensitization groups indicated in the interview that they experienced anxiety reduction in a variety of situations, some of which were in "making speeches", "family interactions", "singing solos", "meeting new people", "interviewing for a "new job", and "communicating with others". Both groups felt that there was only a "small amount" (two on a five point scale) of test anxiety present 12 months after treatment and that they had reduced their non-test anxiety level by an "average amount" (three on a five point scale). All Ss felt that the treatment group size of three was "just right" and indicated that they would not have cared to work individually with a counselor. Five out of six Ss in both groups felt that five meetings were too few, however. One person remarked that he was just beginning to "catch on the group methods when we had to quit". Insight Ss rated "helpfulness of the group meetings" 3.6 on a five point scale (five was very helpful) while the desensitization Ss averaged a 4.3 rating. The mean number of behavioral movements for the desensitization Ss, as recorded during the interview by an observer, was 17.3, while the insight Ss averaged 26.8 movements.

TABLE 19

MEAN CHANGE SCORES PRE VS FOLLOWUP
(N=26)

Variable	For Insight Group	For Desensitization Group	t Score
S-R Inventory of Anxiousness			
"Final Exam"	5.50	6.16	0.13
"Interview"	4.07	4.75	0.15
"Woods"	0.64	4.83	0.82
"Control"	0.07	5.58	1.16
"Sailboat"	1.07	6.00	1.48
"Speech"	0.92	2.33	0.27
"Ledge"	0.42	2.83	0.49
"Counseling"	0.92	7.41	1.15
"Experiment"	2.28	2.58	0.08
"New Data"	2.07	3.83	1.46
"Auto Trip"	1.42	2.16	1.03
Test Anxiety Inventory	21.71	16.50	0.68
Test Anxiety Rating Scale	2.28	0.75	0.72

Discussion

It must be emphasized that the followup study had some definite limitations due to the number of Ss participating, 33 out of the original 63, as well as the inaccessability of all the original criterion measures. If all the Ss were evaluated again, using the same instruments, the results might well have been different. However, when the pre mean scores of the 33 Ss in the followup were compared with the pre mean scores of the original 63 Ss on the three instruments used, there were only slight differences. The lack of complete data has historically been the main difficulty in carrying out followup studies and is something the reader will have to keep in mind when evaluating these results.

The data seem to indicate that 12 months after treatment, the differences between the insight and desensitization groups that originally existed upon post evaluation, have decreased to the point of being insignificant. There did not appear to be distinguishable differences as reported in the interview nor on the objective criterion measures, neither treatment approaching clearcut superiority. Yet, some of the interview data indicated that the desensitization Ss were more successful than the insight Ss according to rating scales and number of behavior movements. This was not proven statistically however. Also, all 11 situations of the S-R Inventory of Anxiousness showed a pattern favoring the desensitization treatment, but again, this was not significant. After 12 months, the insight group did show a greater improvement on the Test Anxiety Inventory and the Test Anxiety Rating Scale, but yet the differences were not close to reaching significance. Perhaps the indecisiveness is a function of the limited group involved in the followup, one-half of the original population. This difficulty could also be accounted for by the weaknesses apparent in most psychotherapeutic measuring devices. The no contact control group did perform according to expectations, but again, only two-thirds of the original no contact group was represented. The wait control group might well have provided some longitudinal data on the effects of delaying the promise of treatment to subjects.

Summary

A 12 month followup was conducted evaluating the enduring and generalizing effects of insight and desensitization methods on 33 of the original 63 Ss. Only the S-R Inventory of Anxiousness, Test Anxiety Inventory, Test Anxiety Rating Scale and a subjective interview were able to be used as dependent variables. Pre-followup mean change scores were used to determine if there were significant differences between the primary treatments, insight and desensitization procedures.

Differences that were apparent between the two methods immediately after treatment (Pre-post change scores) seemed to disappear 12 months later. This observation however, has certain limitations to it. Only one-half of the original population participated in the followup and only three scales and an interview were used to evaluate the enduring effects of the treatments.

Subjectively, there were numerous reports of generalization taking place for both insight and desensitization methods. Objectively, the desensitization Ss showed a greater decrease in pre-followup mean change scores than the insight Ss, but this difference was not significant. Overall, it appears that the significant differences separating the insight and desensitization methods immediately after treatment, were reduced, suggesting that in time, both procedures produce about the same effect. Also, when examined after 12 months, both methods appeared to present less clearcut evidence of effectively treating test anxious college students. Only the Test Anxiety Inventory showed significant evidence of the treatment groups relieving test anxiety. Actually, the results of this criterion measure indicated that a reversal took place, favoring the insight rather than the desensitization group, on the followup. These conclusions however, should be accepted with caution because of the above mentioned limitations.

APPENDIX A

TABLE I

S-R INVENTORY OF ANXIOUSNESS[1]

"You are going into an interview for a very important job"

MEANS, STANDARD DEVIATIONS, AND t VALUES
FOR MEAN DIFFERENCE SCORES

	Variables	Means Pre	Means Post	Means Difference	Standard Deviations Pre	Standard Deviations Post	t
A	Desensitization	35.95	29.75	6.20	7.61	7.40	3.08**
	Insight	35.75	34.25	1.50	10.39	9.88	.96
B	Professional Counselors	33.57	31.42	2.15	7.98	8.66	1.16
	Subprofessional Counselors	37.90	32.52	5.38	9.54	11.33	2.97**
C	High Arousal Level	33.11	28.47	4.64	8.10	9.52	2.12*
	Low Arousal Level	37.86	34.60	3.20	9.25	9.80	2.00
	Wait Control (N=8)	40.12	40.25	-.13	6.87	3.99	-.05
	No Contact Control (N=11)	31.63	33.18	-1.55	9.57	12.27	-.84

*= p< .05
**= p< .01
[1]Total N for Variables A, B, and C = 44

TABLE II

ANALYSIS OF VARIANCE TABLE FOR THE DIFFERENCES BETWEEN MEAN DIFFERENCE SCORES

Source of Variance	Sum of Squares	Degrees of Freedom	Variance Estimate	F Ratio
A Treatments	322.09	1	322.09	5.47*
B Counselors	57.65	1	57.65	.98
C Arousal Level	25.62	1	25.62	.43
AB	229.83	1	229.83	3.90
AC	162.09	1	162.09	2.75
BC	1.44	1	1.44	.02
ABC	188.47	1	188.47	3.20
Within	1882.36	36	58.82	1.00
Total	2869.55	43		

*= p< .05

TABLE III

S-R INVENTORY OF ANXIOUSNESS[1]

"You are alone in the woods at night"

MEANS, STANDARD DEVIATIONS, AND t VALUES
FOR MEAN DIFFERENCE SCORES

	Variables	Means			Standard Deviations		
		Pre	Post	Difference	Pre	Post	t
A	Desensitization	39.45	34.55	4.90	12.27	12.75	3.90**
	Insight	37.75	37.10	.65	12.26	12.15	.33
B	Professional Counselors	38.68	36.42	2.26	13.62	13.08	1.23*
	Subprofessional Counselors	38.52	35.28	3.24	10.98	11.97	2.04
C	High Arousal Level	37.70	34.17	3.53	10.54	11.80	1.62
	Low Arousal Level	39.26	37.04	2.22	13.40	12.88	1.65
	Wait Control (N=8)	37.25	43.25	-6.00	16.59	9.66	-1.30
	No Contact Control (N=11)	41.27	37.63	3.64	12.90	12.85	1.77

*= $p < .05$

**= $p < .01$

[1]Total N for Variables A, B, and C = 44

TABLE IV

ANALYSIS OF VARIANCE TABLE FOR THE DIFFERENCES
BETWEEN MEAN DIFFERENCE SCORES

Source of Variance	Sum of Squares	Degrees of Freedom	Variance Estimate	R Ratio
A Treatments	221.00	1	221.00	3.78
B Counselors	.87	1	.87	.01
C Arousal Level	20.82	1	20.82	.35
AB	103.79	1	103.79	1.77
AC	52.53	1	52.53	.90
BC	2.47	1	2.47	.04
ABC	12.17	1	12.17	.20
Within	1886.05	36	58.31	1.00
Total	2299.70	43		

TABLE V

S-R INVENTORY OF ANXIOUSNESS[1]

"You are entering a competitive contest before spectators"

MEANS, STANDARD DEVIATIONS, AND t VALUES
FOR MEAN DIFFERENCE SCORES

		Means			Standard Deviations		
	Variables	Pre	Post	Difference	Pre	Post	t
A	Desensitization	39.60	33.10	6.50	8.69	10.94	3.69**
	Insight	38.40	34.40	4.00	8.78	10.50	1.43
B	Professional Counselors	37.42	34.84	2.58	8.47	10.73	1.51
	Subprofessional Counselors	40.42	32.76	7.66	8.76	10.65	2.90**
C	High Arousal Level	37.00	31.70	5.30	6.73	10.59	2.47*
	Low Arousal Level	40.47	35.26	5.21	9.70	10.58	2.16*
	Wait Control	39.12	39.00	.12	8.04	7.85	.04
	No Contact Control	37.45	36.72	.73	9.20	9.57	.45

*= $p < .05$

**= $p < .01$

[1]Total N for Variables A, B, and C = 44

TABLE VI

ANALYSIS OF VARIANCE TABLE FOR THE DIFFERENCES
BETWEEN MEAN DIFFERENCE SCORES

Source of Variance	Sum of Squares	Degrees of Freedom	Variance Estimate	F Ratio
A Treatments	69.67	1	69.67	.61
B Counselors	248.41	1	248.41	2.19
C Arousal Level	.17	1	.17	.00
AB	211.23	1	211.23	1.87
AC	28.41	1	28.41	.25
BC	31.20	1	31.20	.27
ABC	22.73	1	22.73	.20
Within	3614.71	36	112.95	1.00
Total	4262.53			

TABLE VII

S-R INVENTORY OF ANXIOUSNESS[1]

"You are starting out in a sailboat on a rough sea"

MEANS, STANDARD DEVIATIONS, AND t VALUES FOR MEAN DIFFERENCE SCORES

	Variables	Means Pre	Means Post	Difference	Standard Deviations Pre	Standard Deviations Post	t
A	Desensitization	34.90	30.00	4.90	12.59	11.68	2.79*
	Insight	35.55	35.85	-.30	9.57	11.02	.16
B	Professional Counselors	34.21	31.68	2.53	8.96	11.18	1.39
	Subprofessional Counselors	36.14	34.04	2.10	12.79	12.12	1.07
C	High Arousal Level	36.35	32.47	3.88	11.52	13.56	1.59
	Low Arousal Level	34.39	33.26	1.13	10.87	10.21	.79
	Wait Control	29.12	32.75	3.63	10.90	10.16	-2.01*
	No Contact Control	41.54	35.72	5.82	12.12	11.61	2.82

*= $p < .05$

[1]Total N for Variables A, B, and C = 44

TABLE VIII

ANALYSIS OF VARIANCE TABLE FOR THE DIFFERENCES BETWEEN MEAN DIFFERENCE SCORES

Source of Variance	Sum of Squares	Degrees of Freedom	Variance Estimate	F Ratio
A Treatments	318.89	1	318.89	4.85*
B Counselors	10.45	1	10.45	.15
C Arousal Level	59.41	1	59.41	.90
AB	16.41	1	16.41	.24
AC	142.23	1	142.23	2.16
BC	13.08	1	13.08	.19
ABC	81.67	1	65.73	1.24
Within	2103.38	36		
Total	2745.52	43		

*= $p < .05$

TABLE IX

S-R INVENTORY OF ANXIOUSNESS[1]

"You are getting up to give a speech before a large group"

MEANS, STANDARD DEVIATIONS, AND t VALUES
FOR MEAN DIFFERENCE SCORES

	Variables	Means			Standard Deviations		
		Pre	Post	Difference	Pre	Post	t
A	Desensitization	38.95	32.80	6.15	10.53	11.00	2.89**
	Insight	42.05	39.25	2.80	11.66	13.64	1.24
B	Professional Counselors	40.63	37.10	3.53	9.34	11.87	1.78*
	Subprofessional Counselors	40.38	35.04	5.34	12.68	13.55	2.23
C	High Arousal Level	37.76	34.23	3.53	10.20	13.79	1.14**
	Low Arousal Level	42.52	37.34	5.18	11.48	11.89	3.41
	Wait Control	48.37	48.37	.00	8.97	9.80	.00
	No Contact Control	37.81	37.36	.45	10.19	9.72	.15

*= p< .05
**= p< .01
[1]Total N for Variables A, B, and C = 44

TABLE X

ANALYSIS OF VARIANCE TABLE FOR THE DIFFERENCE
BETWEEN MEAN DIFFERENCE SCORES

Source of Variance	Sum of Squares	Degrees of Freedom	Variance Estimate	F Ratio
A Treatments	154.37	1	154.37	1.58
B Counselors	36.40	1	36.40	.37
C Arousal Level	12.08	1	12.08	.12
AB	342.59	1	342.59	3.52
AC	.37	1	.37	.00
BC	1.90	1	1.90	.01
ABC	194.84	1	97.21	1.00
Within	3110.80	36		
Total	3853.35	43		

TABLE XI

S-R INVENTORY OF ANXIOUSNESS[1]

"You are crawling on a ledge high on a mountain side"

MEANS, STANDARD DEVIATIONS, AND t VALUES FOR MEAN DIFFERENCE SCORES

	Variables	Means Pre	Means Post	Difference	Standard Deviations Pre	Standard Deviations Post	t
A	Desensitization	47.05	41.90	5.15	8.97	12.62	2.83**
	Insight	47.20	47.10	.10	11.21	10.54	.04
B	Professional Counselors	46.84	45.10	1.74	8.72	12.57	.66
	Subprofessional Counselors	47.38	43.95	3.43	11.28	11.29	2.08*
C	High Arousal Level	45.11	42.47	2.64	8.78	12.49	1.25
	Low Arousal Level	48.60	46.00	2.60	10.79	11.26	1.22
	Wait Control (N=8)	46.12	42.50	3.62	9.47	10.12	1.43
	No Contact Control (N=11)	47.63	42.85	4.78	8.60	9.16	1.03

*
**= p<.05
= p<.01

[1]Total N for Variables A, B, and C = 44

TABLE XII

ANALYSIS OF VARIANCE TABLE FOR THE DIFFERENCES BETWEEN MEAN DIFFERENCE SCORES

Source of Variance	Sum of Squares	Degrees of Freedom	Variance Estimate	F Ratio
A Treatments	311.17	1	311.17	3.60
B Counselors	11.91	1	11.91	.13
C Arousal Level	3.20	1	3.20	.03
AB	434.13	1	434.13	5.03*
AC	5.29	1	5.29	.06
BC	17.79	1	17.79	.20
ABC	36.09	1	36.09	.41
Within	2759.16	36	86.22	1.00
Total	3578.74	43		

*= p<.05

TABLE XIII

S-R INVENTORY OF ANXIOUSNESS[1]

"You are going to a counseling bureau to seek help in solving a personal problem"

MEANS, STANDARD DEVIATIONS, AND t VALUES FOR MEAN DIFFERENCE SCORES

		Means			Standard Deviations		
	Variables	Pre	Post	Difference	Pre	Post	t
A	Desensitization	34.25	30.00	4.25	7.47	9.00	2.50*
	Insight	35.40	35.05	.35	11.13	10.31	.15
B	Professional Counselors	32.26	30.89	1.37	7.66	8.53	.73
	Subprofessional Counselors	37.14	34.00	3.14	10.33	10.98	1.44
C	High Arousal Level	33.58	32.17	1.41	8.95	10.25	.52
	Low Arousal Level	35.73	32.78	2.95	9.78	9.84	1.89
	Wait Control (N=8)	39.75	38.75	1.00	8.43	7.97	.37
	No Contact Control (N=11)	33.90	34.27	-.37	10.06	10.82	.13

*
**= p< .05
= p< .01

[1]Total N for Variables A, B, and C = 44

TABLE XIV

ANALYSIS OF VARIANCE TABLE FOR THE DIFFERENCES BETWEEN MEAN DIFFERENCE SCORES

Source of Variance	Sum of Squares	Degrees of Freedom	Variance Estimate	F Ratio
A Treatments	147.77	1	147.77	1.77
B Counselors	24.98	1	24.98	.30
C Arousal Level	15.80	1	15.80	.18
AB	242.80	1	242.80	2.91
AC	28.96	1	28.96	.34
BC	19.00	1	19.00	.22
ABC	2.71	1	2.71	.03
Within	2662.45	36	83.20	1.00
Total	3144.47			

TABLE XV

S-R INVENTORY OF ANXIOUSNESS[1]

"You are going into a psychological experiment"

MEANS, STANDARD DEVIATIONS, AND t VALUES
FOR MEAN DIFFERENCE SCORES

	Variables	Means			Standard Deviations		
		Pre	Post	Difference	Pre	Post	t
A	Desensitization	30.10	28.90	1.20	6.69	9.07	.86
	Insight	32.25	32.20	.05	10.15	9.76	.02
B	Professional Counselors	30.94	27.63	3.31	8.81	6.61	1.89
	Subprofessional Counselors	31.38	33.19	-1.81	8.52	10.92	-.97
C	High Arousal Levels	29.88	29.94	-.06	7.95	11.17	-.02
	Low Arousal Levels	32.13	31.00	1.13	9.02	8.19	.64
	Wait Control (N=8)	33.62	33.25	.37	11.41	9.66	.22
	No Contact Control (N=11)	24.00	25.18	-1.18	7.66	5.91	-1.10

[1]Total N for Variables A, B, and C = 44

TABLE XVI

ANALYSIS OF VARIANCE TABLE FOR THE DIFFERENCES
BETWEEN MEAN DIFFERENCE SCORES

Source of Variance	Sum of Squares	Degrees of Freedom	Variance Estimate	F Ratio
A Treatments	49.60	1	49.60	.80
B Counselors	231.00	1	231.00	3.72
C Arousal Level	3.72	1	3.72	.06
AB	5.23	1	5.23	.08
AC	204.60	1	204.60	3.29
BC	89.23	1	89.23	1.43
ABC	180.49	1	180.49	2.91
Within	1984.28	36	62.00	1.00
Total	2748.15			

TABLE XVII

S-R INVENTORY OF ANXIOUSNESS[1]

"You are going to meet a new date"

MEANS, STANDARD DEVIATIONS, AND t VALUES
FOR MEAN DIFFERENCE SCORES

	Variables	Means Pre	Means Post	Means Difference	Standard Deviations Pre	Standard Deviations Post	t
A	Desensitization	34.00	29.35	4.65	7.64	9.89	2.37*
	Insight	30.75	29.90	.85	6.58	7.39	.58
B	Professional Counselors	31.26	28.36	2.90	7.54	6.54	1.96
	Subprofessional Counselors	33.38	30.76	2.62	6.96	10.18	1.31
C	High Arousal Level	30.17	28.17	2.00	6.93	9.56	1.10
	Low Arousal Level	34.00	30.69	3.31	7.15	7.90	1.91
	Wait Control (N=8)	31.70	31.90	-.20	5.79	9.17	-.05
	No Contact Control (N=11)	28.18	25.72	2.46	6.09	5.95	1.21

*1 = $p < .05$

[1]Total N for Variables A, B, and C = 44

TABLE XVIII

ANALYSIS OF VARIANCE TABLE FOR THE DIFFERENCES
BETWEEN MEAN DIFFERENCE SCORES

Source of Variance	Sum of Squares	Degrees of Freedom	Variance Estimate	F Ratio
A Treatments	149.64	1	149.64	2.36
B Counselors	.22	1	.22	.00
C Arousal Level	10.79	1	10.79	.17
AB	61.40	1	61.40	.96
AC	22.00	1	22.00	.34
BC	16.00	1	16.00	.25
ABC	131.47	1	131.47	2.07
Within	2027.55	36	63.36	1.00
Total	2403.07	43		

TABLE XIX

S-R INVENTORY OF ANXIOUSNESS[1]

"You are just starting off on a long automobile trip"

MEANS, STANDARD DEVIATIONS, AND t VALUES FOR MEAN DIFFERENCE SCORES

	Variables	Pre	Post	Differences	Standard Deviations Pre	Post	t
A	Desensitization	22.15	21.80	.35	5.43	6.01	.23
	Insight	21.26	22.31	-1.05	4.77	6.07	-.98
B	Professional Counselors	19.83	20.05	-.22	4.39	4.54	-.17
	Subprofessional Counselors	23.23	23.71	-.48	5.15	6.55	-.40
C	High Arousal Level	22.37	21.31	1.06	5.43	5.58	1.09
	Low Arousal Level	21.22	22.63	1.41	4.84	6.29	-1.09
	Wait Control (N=8)	21.00	23.25	2.25	6.14	5.82	-.72
	No Contact Control (N=11)	20.00	15.45	4.55	10.80	6.89	1.36

[1]Total N for Variables A, B, and C = 44

TABLE XX

ANALYSIS OF VARIANCE TABLE FOR THE DIFFERENCES BETWEEN MEAN DIFFERENCE SCORES

Source of Variance	Sum of Squares	Degrees of Freedom	Variance Estimate	R Ratio
A Treatments	28.80	1	28.80	1.02
B Counselors	1.71	1	1.71	.06
C Arousal Level	59.91	1	59.91	2.12
AB	.66	1	.66	.02
AC	22.78	1	22.78	.80
BC	1.98	1	1.93	.07
ABC	116.80	1	116.80	4.13*
Within	847.03	36	28.23	1.00
Total	1079.67	43		

* = $p < .05$

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